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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,441	02/04/2002	Jeffrey P. Kotowski	NSC1-G9800 [P05051]	7556

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EXAMINER

HUR, JUNG H

ART UNIT

PAPER NUMBER

2824

DATE MAILED: 09/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/067,441

Applicant(s)

KOTOWSKI ET AL.

Examiner

Jung (John) Hur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,9,14,15,21-24,28-32,35 and 41-44 is/are rejected.
- 7) ☒ Claim(s) 7,8,10-13,16-20,25-27,33,34 and 36-40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Amendment

1. Acknowledgment is made of applicant's Amendment, filed 20 June 2003. The changes and remarks disclosed therein were considered.

Claims 41-44 have been added. Therefore, claims 1-44 are pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 9, 21-24, 28-32 and 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kon (Japanese Pat. Appl. Pub. No. 02-188836) in view of Knotz (U.S. Pat. No. 6,289,055).

Regarding claims 1, 2, 21, 28, 29 and 41-44, Kon in Figs. 1 and 2 discloses an integrated circuit (6) and a method for controlling an operational circuitry within the integrated circuit, comprising: an external node (10); at least one additional external node (for example, 9 or 11 or any of the others of the integrated circuit 6); operational circuitry (as a part of the integrated circuit 6), wherein the operational circuitry is configured to operate in response to a control signal and at least one additional control signal (inherent in the integrated circuit 6 as a microcomputer, including enable and clock signals); and test circuitry (including 14, 15 and 16) coupled to the external node and the operational circuitry, wherein the test circuitry is configured

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to operate in at least one test mode in response to test data (signal f) received at the external node from an external source (including 1), and the test circuitry is configured to assert to the operational circuitry a control signal (based on the output signals TM's from 16) in response to an external control signal (for example, signal d).

However, Kon does not disclose that the external control signal is received at the same external node for receiving the test data, and that the test circuitry is configured to extract the test data from an amplitude-modulated input signal asserted to the external node from the external source, and to generate the control signal in response to the input signal.

Knotz, for example in Figs. 6, 7 and 10, discloses an external control signal (for example, EN) received at the same external node (for 3) for receiving data (SD), and that the receiving circuitry (including 3) is configured to extract the data (SD' at the receiving side) from an amplitude-modulated input signal (m) asserted to the external node from the external source (including 1).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the means of transmitting signals, as disclosed in Knotz, in the test circuit of Kon, such that signals a, d and f of Kon would correspond to signals SC, EN, and SD of Knotz, respectively, and therefore the control signal of Kon would be generated in response to the input signal m of Knotz, for the purpose of further reducing the number of signal pins or leads necessary for controlling a test circuitry or an operational circuitry in an integrated circuit (see, for example, Knotz, column 1, lines 17-21).

When Kon and Knotz are combined as above, the combination of Kon in view of Knotz further discloses the following:

Regarding claims 3, Kon in view of Knotz further discloses that the external control signal (EN' of Knotz, at the receiving side) is a binary signal determined by the input signal (extracted from the input signal m of Knotz), and the test circuitry is operable in a mode in which the control signal is a binary signal (inherent in 6 of Kon) whose state is determined by the state of the external control signal (via 12-16 of Kon).

Regarding claims 4, 22, 30 and 31, Kon in view of Knotz further discloses that the test circuitry is configured to extract a clock signal (SC' of Knotz, at the receiving side) from the input signal, and to operate in response to the clock signal during said at least one test mode (via 12-14 of Kon).

Regarding claims 5, 6, 23, 24, and 32, Kon in view of Knotz further discloses, particularly in Figs. 6, 7 and 10 of Knotz, that the input signal has at least three levels, including a low level (L) below a first threshold (V3), a high level (H3) above a second threshold (V1), and an intermediate level (H1 or H2) between the first threshold and the second threshold, and wherein the test circuitry includes: first comparator circuitry (33), coupled to receive the input signal and configured to operate in a first mode in which said first comparator circuitry generated a first signal (EN') indicative of whether the input signal has a level less than the first threshold; second comparator circuitry (31), coupled to receive the input signal and configured to operate in a first mode in which said second comparator circuitry generates a second signal (S₃₁) indicative of whether the input signal has a level greater than the second threshold; and a flip-flop (6) having a set terminal (S), a reset terminal (/R), and an output (Q), wherein the set terminal is

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coupled to receive the second signal, the reset terminal is coupled to receive the first signal, the output asserts a data signal (SD') in response to the first signal and the second signal, and the data signal is indicative of the test data (signal f of Kon represented by SD and SD' of Knotz, wherein SD' is a regenerated data signal; see, for example, column 3, line 65 through column 4, line 4).

Regarding claim 9, Kon in view of Knotz further discloses that the test circuitry includes a comparator circuitry (including 3 and 6 of Knotz) coupled and configured to receive the input signal, to extract the test data (SD' of Knotz, or signal f of Kon) from the input signal, and to extract a latch signal (EN' of Knotz, or signal d of Kon) from the input signal, wherein the latch signal is indicative of whether the input signal has a level exceeding a latch threshold (V3 of Knotz); and at least one register (15 of Kon; also, R in Fig. 10 of Knotz) coupled to the comparator circuitry for receiving the latch signal (via 12-14 of Kon) and at least some of the test data (SD' of Knotz, or signal f of Kon).

4. Claims 14, 15, and 35, insofar as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kon (Japanese Pat. Appl. Pub. No. 02-188836) in view of Knotz (U.S. Pat. No. 6,289,055) as applied to claims 1 and 28 above, and further in view of Kato (U.S. Pat. No. 5,557,571).

Regarding claims 14, 15, and 35, Kon in view of Knotz discloses an integrated circuit and a method as in claims 1 and 28 above, with the exception of the test circuitry configured to assert data to the external node, for transmission to external circuitry during a measurement mode.

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Kato discloses a circuitry configure to assert signal to the external node during a measurement mode (see, for example, column 5, lines 17-30 with reference to Figs. 1 and 7).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the test circuitry of Kon in view of Knotz further in view of Kato to assert data to the external node during a measurement mode, for the purpose of not having to provide an extra pin for such function (see Kato, for example, column 5, lines 14-16).

Allowable Subject Matter

5. Claims 7, 8, 10-13, 16-20, 25-27, 33, 34, and 36-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reasons for the indication of allowable subject matter are on record in the file.

Response to Amendment/Arguments

6. The Declaration filed on 20 June 2003 under 37 CFR 1.131 is sufficient to overcome the Schneider et al. (U.S. Pat. Appl. Pub. No. 2002/0097616) reference. Therefore, the rejections based on Schneider et al. as a sole 35 USC 102 reference or one of the 35 USC 103 references have been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art reference(s), as cited above.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Muehlbauer et al. (U.S. Pat. No. 4,291,221) discloses a control signal superposed on a clock signal and transmitted via one and the same pin.


Adkins (U.S. Pat. No. 6,400,605) discloses a single input pin that serves multiple functions during normal, test, and program modes.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung (John) Hur whose telephone number is (703) 308-1624. The examiner can normally be reached on M-F 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (703) 308-2816. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

jhh


MICHAEL S. LEBENTRITT
PRIMARY EXAMINER